

HALF-LIFE²

RAISING THE BAR



HALF-LIFE^{® 2}

RAISING THE BAR



HALF-LIFE²

RAISING THE BAR

By Valve

With:

Contributing Editor: David SJ Hodgson

Product Manager: Jill Hinkley

Senior Project Editor: Brooke N. Hall

Editorial Supervisor: Christy Sedart

Senior Designer: Marc W. Ridgel

Designer: Melissa Francis

Editorial Assistant: Tamar D. Foster



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3000 Lava Ridge Court
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1-800-733-9000
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FOREWORD BY GABE NEWELL

As I write this, I have the world's worst case of stage fright. After six years and tens of millions of dollars, after break-ins and lawsuits, after marriages and children and divorces and deaths, we're about to ship *Half-Life 2*. You, the reader, know how the launch of *Half-Life 2* went. You have read the reviews, seen the sales figures, heard about awards (or the lack thereof), and best of all, you've played the finished game. We've done none of these. Did we create a worthy successor to *Half-Life*? Did we live up to gamer's expectations? Did we pull it off? You know, and I don't, and that seems terribly unfair to me right now.

What else seems terribly unfair to me is the disproportionate credit I receive for Valve's success. I am part of a team, and part of what I do is act as a public face for the corporation (for example, writing forewords). One thing I hope you take away from this book is a clearer sense of just how much work is involved, how much creativity is required to build a game. There may be some games that are created by auteurs, a single driving vision surrounded by an army of obedient servants, but I don't think a game like *Half-Life 2* can be created that way. For anyone on the team, I can list all of the things that would have been lost if they hadn't been part of the creation of the game. There is a myth that goes told about the solitary writer, the autocratic director, the Napoleonic CEO that just doesn't ring true to me anymore, having been part of the collaborative process at Valve.

We are also part of the larger game community. One of the unique characteristics of games as a medium is that you have to create it in cooperation with the audience. A multiplayer game is only as fun as the other people you are playing with. A single-player game is really a movie that you create in cooperation with the player, where the lead actor doesn't have a copy of the script. A game engine is not just the platform for the game itself, but a platform for all the MODs that came along to extend the life and enjoyment of the experience. While you'll see little evidence of this larger community in *Half-Life 2: Raising the Bar*, be aware that everyone at Valve is acutely aware of our role in that larger community, the contributions that community makes to the success of our endeavors, and our deep gratitude for their support over the years.

Gabe Newell

8.11.04

Bellevue, Washington





Investigation 1: Anomalous Materials



Building a world from the ground up is not a task to be taken lightly, but in a sense, that was the challenge facing Gabe Newell and Mike Harrington in 1996. Retired Microsoft developers, Gabe and Mike shared a vision of the future of gaming, but neither of them could have known how far their dream would lead. From the very beginning, their approach relied on maverick risk-taking and a foundation of solid business planning. It was a sound, easily justifiable decision to license the robust *Quake* engine from *Quake* and *Doom* creators, id Software; it was a sensible decision to proceed to work quietly, without any hype whatsoever, in the small Seattle suburb of Kirkland, Washington; and it made perfect sense to start building what was essentially a fast-paced First-Person Shooter with a simple intuitive interface, and plenty of combat with alien monsters. What was not so obviously safe and sane was to hire many of the company's first employees from the excitable ranks of *Quake*'s own mod community: young programmers and level designers who spent their days delivering pizzas and their nights cranking out monster-infested nightclubs and rule-bending deathmatch maps. From the very beginning, Valve tapped into the essence of the gaming community, encouraging direct creative input from those who loved games so much that they couldn't help but make their own.



Half-Life: A Nonstandard Specimen

.01

Setting to work, Valve initially staffed two design teams. The project codenamed *Guiver* was to be a First-Person Shooter in the vein of *Doom*, with emphasis on aliens, ammo, and adrenaline. The other project, called *Prospero*, was to be a moody, literary game, drawing on sources ranging from *Myst* to Borges. As *Half-Life* gathered critical mass, it gradually absorbed every member of the company, spelling the demise of *Prospero*, but also bringing more emphasis on narrative and atmosphere to *Half-Life*. Meanwhile, it became clear to Valve's founders that *Half-Life* was just not going to be good enough unless the reconstituted team had time to rethink and rebuild the game from the ground up. In late 1997, Gabe and Mike set back the hands of the clock, giving the team an additional year to develop and refine *Half-Life*. The additional incubation time made all the difference in the world.

Prospero
Greg Coomer

Prospero was one of Valve's first game designs. Originally slated to come out shortly after *Half-Life*, the game emphasized exploration, a reconfigurable skynote, and combat via "psionic" powers. *Prospero*'s heroine Queen, as "The Librarian" (or "Ralph") underwent a series of design changes during the early development of the game. One iteration relied heavily on the use of hardware power amplifiers to augment her mental abilities.

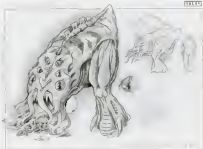
As the design of *Quake* started to take over some of *Prospero*'s initial goals, *Prospero* started to change into a massively multiplayer game. *Prospero* was also intended to be distributed, with a complicated mix of Valve and user-created worlds accessed through the in-game "library," each world running on a different server. Unlike distribution, a server becomes a local leader, and other worlds likely developed for *Prospero* never quite died, but found a new home in what was to eventually become *Half-Life*, as well as *Steam*.



Quiver Creature Concepts

Chuck Jones

Half-Life's original design was codenamed "Quiver" in reference to Stephen King's influential story "The Mist," in which monsters swarm out of a military base known as Armageddon. This name also suggests that it was originally conceived as a major cousin to Quake. By the time the name Half-Life was decided, the game had already taken on its own strong personality, quite distinct from other games of the time.



QUIVER CREATURE CONCEPT





Half-Life Foes
Chuck Jones

Four early Half-Life enemies: The Assassin, Brainboy with a mind-gun, Butcher, and the Female Soldier

Houndeye



Demonstrates pack behavior, is non-aggressive singly, but in numbers is very aggressive

Houndeye

by Backman

Some creations required several iterations, while others were nearly complete on the first try. The Houndeye was one monster that went virtually unchanged from the first sketch.

"The Houndeye was one of the designs from *Half-Life* that came very easily. Its anatomy was inspired by a huge three-legged tabby cat named 'Tigod' that lived in my neighborhood as a child."

- Ted Backman



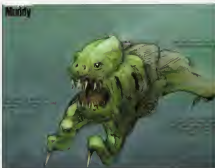
Big Mama & Muddy
Ted Buckman

Strong art direction and clear goals were there for both of these creatures from the start, but the AI proved to be very complicated due to their size and how different they were from 'standard' game monsters.

"Big Mama (technically a Gorgech) is the final life phase of the lowly Headcrab. Few Headcrabs ever reach this stage, and little is known about how and when the metamorphosis takes place. This was a hotly contested design around the office during the development of *Half-Life*. I was nearly convinced that this was too graphic, but luckily the Gorgech found a champion in none other than Gabe Newell!" - Ted Buckman

"Sometimes we're just sitting around and we're tired and somebody comes up with a goofy idea like 'Why don't we put a giant testicle on a 20-foot tall armored spider?' and Big Mama is born. Whereas alternatively, there are certain breeds we've created through gameplay instead of crazy ideas. A creature such as the Barokach was created within the game universe as a way to obstruct movement in dark areas. There's no simple way to create monsters."

- Gabe Newell



Kingpin & Fast Walker

Ted Backman

Regardless of how compelling the character design seems, without convincing AI and clear gameplay goals, even the best of designs can get put away for a future title.

"We wanted the Fast Walker to be an ally, a creature who learned to love Gordon because of all the fresh meat! Gordon would inadvertently provide through combat. This creature was to give Gordon clues about what was coming around the next corner, barking alarms." — Ted Backman

Kingpin

Used shooting primarily aimed at an enemy defense that makes it difficult to reach weapons

Neckline from 20th century body

4 eyes that give 360 degree vision

clucking sound as it walks on its three different legs

Fast Walker

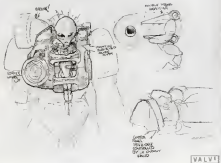
Used for patrolling areas, as a threat to the player, and as a guard for the player

Used for patrolling areas and as a threat to the player

Used for patrolling areas, as a threat to the player, and as a guard for the player

Used for patrolling areas and as a threat to the player

BLACK HOLE GUN



Alien Concepts

Chuck Jones & Ted Beckman

Before it became Half-Life, "Gvalve" went through a design phase where strange ideas and over-the-top humor were on the scene. Eventually the team settled on a horror-action theme, with a few moments of dark humor to help balance the tension. Among some of the rejected suggestions ranged from a tentacle whipper severed from an octopus and deployed as a kind of slimy scorpion, and a foot fight in the Black Mesa cafeteria.



Flocking Floater

It is a creature of the "Fighting" class.



Head shown in profile

Flocking Floater Ted Beckman

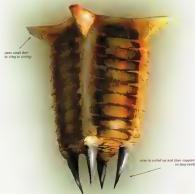
This creature was a living balloon, held aloft by buoyant gases trapped in its head membrane. The fin on the rear portion of the monster was fully articulated like a bat wing, tipped with poisonous spines. Flocking Floaters had feathery antennae, much like a moth, as their only sensory organ.

Barnacle

Ted Beckman

Known for its strangling grip, the Barnacle is one of the many creatures that survived the early days of *Half-Life* and still continues to thrive in City 17.

"The Barnacle is *Half-Life*'s essential sneak-peek or cheap-shock monster. You can see them coming from a mile off. They are completely inert and easily avoided. This makes it infinitely more humiliating when they grab you and bite off your head." - Dave Keller



When small ones are hung in strings

When to pull up and then collapse on long death



Chumtead
Chuck Jones

The Chumtead was meant to be the favorite food of many Xen monsters. Team members wanted to test the idea of the player using a Chumtead as bait to lure a Bulbosaur from its den, or distracting it when it was attacking them. The bait gameplay was never developed, but before the creature was cut from the game, it cycled through a number of names: from Chutbead to Chumbead to the truly unfortunate appellation, Choad. Though the Chumtead was cut from *Hell-Life*, it remains a mod community favorite.





VALVE

Alien Slave

Chuck Jones & Jorhln Eng

The Alien Slave (dubbed Norkvant when it came time to put together a Half-Life strategy guide) would return in *Half-Life 2* as an ally working with the resistance.



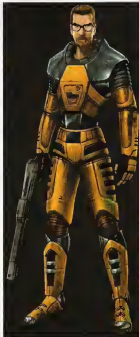


VALVE

Alien Gargant
Chuck Jones

The Alien Gargant was conceived as huge, powerful, and relentless. It was not realized until fairly late in *Half-Life*'s development exactly how huge it would be. Many of the areas where the player battled the gargant had to be redesigned, with walkways widened substantially in order to allow the Alien Gargant to travel comfortably without getting stuck. Valve designers learned that creature design and level design must be coordinated at every stage of game development.

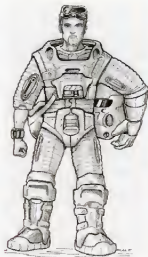




Gordon Freeman
 Chuck Jones & Dabib Eng

This is an early model for the viewpoint scientist character (below), affectionately known as even the *Space Biker*. Gordon's beard eventually turned into a stylish goatee, while his glasses also went through several versions. For a time, he even sported a ponytail!

"We went round and round on names for the character. I thought it should evoke some famous scientist, so I took the name of one of my heroes, physicist/philosopher, Freeman Dyson, and smashed his name together with that of the French mathematician, Jules Henri Poincaré. I proudly blurted out Dyson Poincaré. Gabe immediately countered with the far more reasonable Gordon Freeman, and that was that. Like many important game design discussions in those days, this all happened at lunchtime, in Gabe's car on route to our favorite Japanese restaurant." — Marc Laidlaw



"When choosing a name for the game, we tried to establish criteria: it needed to be evocative of the theme, avoid clichés in the genre, and have a corresponding visual mark. We brainstormed some ideas and then picked *Half-Life*. We wanted to communicate the science fiction feel, the more mature sense that we were going after a game that was not just a shooting gallery. There was going to be a richer experience and a more thought-provoking one...and so *Half-Life*. We thought about that, and that seemed cool, and we tried to look at *Half-Dead*. We went through hundreds of different names, *Half-Life* was one that stuck out fairly quickly." - Gabe Newell



Infantry grunt



Infantry grunt

Soldiers

Chuck Jones

Even with their award-winning AI, at some level the soldiers job in the *Alien* universe was to look busy, menace the player, and die in interesting ways. Viewing a clever form of anti-camo these soldiers were designed to give both the impression of being camouflaged, but at the same time be highly visible on low-resolution displays.

"The soldier AI was designed to have a few tactical responses to things that the player did, so the combat experiences were exciting and different for various styles of play. Designing the soldiers to react to the player's choices allowed each player to develop skills and tactics to succeed within their own style. I think we knew we were on the right track when the soldier AI started doing things that even surprised me." - Steve Bredt



- Empty attacks with M4
- Two random attacks with LMG (one with)
- One random attack at close range
- Randomly trigger
- Randomly trigger
- Randomly trigger and grenade to be in the middle of the attack



Black Mesa

Science fiction author Marc Ladewig joined Valve in the summer of 1997. Presented are Marc's brainstorming notes on the name of the research facility eventually dubbed, "Black Mesa."

~~100~~
~~100~~

you are Smith's Representative & I am
the Member
of the House
~~Smith~~ (Name = T. Zoo,
~~Smith~~)
43 pm

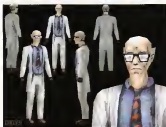
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Date: 1/10/20
Subject: Physics
Grade: 11.12

Mesa Diablo, N - Puerto
El Alto Mesa

"It's great fun to invent names for our creations, and thus see them go out into the world and take on lives of their own. But I am very glad that I decided to go with 'Black Mass Research Facility' rather than 'Black Butts'."

- Marc Levine

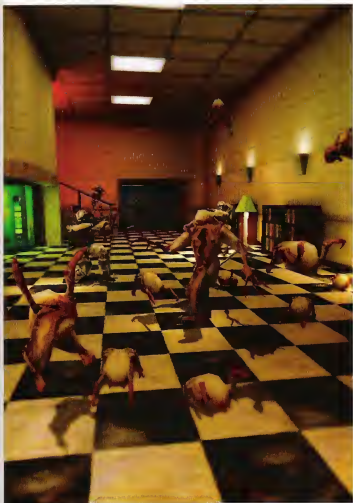
• Marc Lantieri

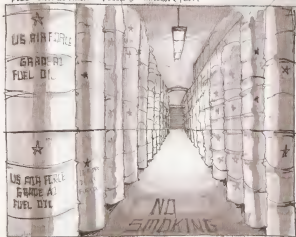


Barney, Scientist, & G-Man
Chuck Jones

Initially conceived as a somewhat intellectual bad guy, Barney was used by AI programmer Steve Ford to run experiments in enemy squad behavior. By putting the player in the role of squad leader, and forcing Barney to follow instead of fight the player, Baniel hoped for an easy way to test navigation rules. The unexpected result of this experiment was a working companion character, which instantly appealed to everyone who saw Barney in action. This caused Valve to rethink large portions of the story, and recast Gordon's role in the world, as the game went into a complete overhaul beginning in late 1997.

In early prototypes, all characters in the game had an adversarial relationship with the player. There was no assumption that friendly allies were possible, let alone desirable. When the first active allies showed their usefulness, the designers began to cast around for characters who were neither allies nor outright enemies, but existed merely to create a sense of intrigue. This precise design goal gave birth to the mysterious breakfast-carrying G-Man. While the codename "G-Man" slipped into common use, it remains merely a codename. The actual name of this character is still open to speculation.





LARME CHENEDEN
WAS STRUCKED WITH
BARREL OF OIL -

POSSIBLE GAME-
PLAY ISSUES -
AN ENCOUNTER
HERE WOULD FORCE
HAND TO HAND /
MELEE COMBAT
USE OF GUNS
COULD CAUSE
PROBLEMS /



Must walk single file down path - creature moves in from other end when player reaches halfway.

Black Mesa

Toll Backman

The team created a variety of environments during their second visit. Clockwise from the top left: a fuel depot, a mosque, a high-security checkpoint and a launch point.

"First testing at Half-Life was something we had to do meticulously quickly. The time from when we finish a design idea and playtest to the next iteration was often a matter of a few hours. We were under a strict delivery deadline, and I don't think any of us had finalized software and gameplay horizons at such a pace before. Several of us spent most of our waking hours for our six months packed into a single office as not-so-affectionately referred to as 'the submarine.' For most of us in the room, it was our first time shipping a game. We pulled an adolescent number of 16-hour days, and it was one of the most fun and rewarding experiences I've had at Valve."

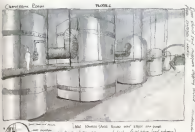
- Kelly Barker

Pygmy Round Shells *smaller* *more* *abundant* *in* *the* *lagoon*

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Abrechnung von 2 Hektar an den Tag 4 von A₂ bei 2000 €



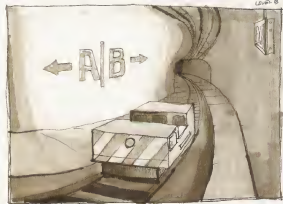
Black Mesa
Ted Backman

Clockwise from top left, a missile silo, two views of a Xen
Cryogenic storage facility, train tunnels, and a reader
control room

"Kelly Bailey and I only had a weekend to get the test
chamber disaster sequence built. We worked for 48 hours
straight. Miserably. I had both food and a comfortable chair
to sit in, but Kelly sat atop of a wooden sawhorse we affectionately dubbed 'The Throne of Vice' in order to keep
awake. We battled through it and went home for a few
hours of sleep and came back Monday still in a zombie-like
state. Everyone in the office was all excited about
something, but it took a bit for me to realize they had found
the sequence and all played through it, everyone just loved
it. It was just one of those great moments." - John Carmack



Train Tunnel w/ George Carlin - Electric Blue - illuminated by light during



small walkways on sides of tunnels - sleeping
on tracks, close enough to charge - danger signs
on wall warning of electricity

small pens between 6 sides - across the tunnel
gained by going all the way to the top of the tunnel!



Enter

Enter Test Chamber

Door sensors shut - not getting out

You get service cart - something screams
out of it - alien?

A.M.S.
antimass spectrometer

Countdown -

[Time to look around]

Voice 1 (low) All right, Gordon - your suit should keep you comfortable through all this. The specimen is being realied even as ~~we~~ speak. We will warm up the ~~antimass spectrometer~~ ~~now~~ ~~and~~ ~~see~~ ~~if~~ ~~we~~ ~~can~~ ~~hold~~ ~~her~~ ~~steady~~ ~~at~~ ~~80%~~ ~~until~~ ~~the~~ ~~carrier~~ ~~arrives~~.
antimass spectrometer now, and see if we can hold her steady at 80% until the carrier arrives.

Voice 2 (med) Power in three... two... one...

FIRST STAGE HUM

Voice 1 Predictable arrays. Very good. Gordon -

Voice 3 (high) Mister Freeman, ~~you~~ you might want to stand back from the ~~driving~~ ~~stage~~ focal beam, ~~at~~ ~~stop~~ ~~for~~ during this ~~very~~ phase, suit or no suit.

Voice 2 You weren't planning on having children were you, Gordon?

V3 Nonsense! Nothing's been proven!







C74

Extra Life: The Mod Movement

.02

For many gamers, owning *Half-Life* marked the beginning of a new, even greater challenge: Making copies of their own. Countless talented *Half-Life* fans—programmers, artists, and level designers—knew up Valve's Software Developer Kit and set to work on their own designs. In addition to custom levels for online play, the mod community began to create new worlds from scratch. From the fertile minds of the mod scene, such enduring studs as *Ripley Firestorm*, *Day of Defeat*, and *Counter-Strike*. These titles in particular stand out in the crowd, as Valve encouraged the developers by giving them the chance to work on their games full-time, bringing them to a wider audience through the channels opened up indirectly by *Half-Life*. In the case of *Counter-Strike*, the droid's keep made two franchises—*Half-Life* and *Valley Forge*—the most

Team Fortress

It all began with *Team Fortress*, the first team modification for Quake featuring team-combat gameplay. Co-creators Robin Walker and John Cook were hired by Valve in early 1996 to help ship *Half-Life* and port *Team Fortress* to *Half-Life* technology. This grew to become a *Team Fortress Classic* which, in addition to becoming the number one online action game of its time, also played a critical role in helping Valve shape future versions of the *Half-Life* SDK.

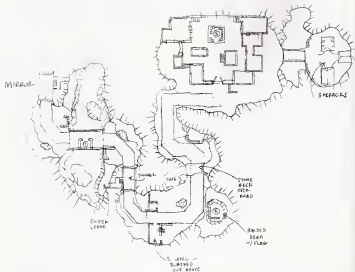




Strong defensive lines were essential in many *Battle Fortress* maps, preventing enemy teams from stealing flags, planting bombs, capturing control zones, assassinating a VIP, and more. Many of today's standard multiplayer FPS gameplays were first seen in a third-party 17-year-old mod.



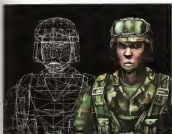
Top, from left to right: Medic, Engineer, Sniper, Scout, Demolition, Heavy Weapons Guy, Pyro, Spy. Bottom, from left to right: Scout, Spy, Sniper, Heavy Weapons Guy, Demolition, Medic, Pyro, Engineer, Soldier.



Warpath

"After the initial design discussions, maps were sketched out by the design group and then built by the level designers. Once the initial version was complete, regular playtesting began. Many changes were made throughout the playtesting cycle, often resulting in drastic changes to original plans for the map. The map you see here is Warpath, which was designed as a linear control-zone map. Teams had to push forward and hold a control zone on the line. Once secured, the team could push forward and attempt to capture the next zone. This was the first CS map in which teams respawmed in different locations based upon which control zones their team controlled, and this led to a long test cycle whose respawn points were moved many times." - Robyn Walker

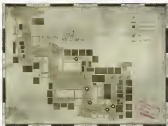




From Fortress 2

Chuck Jones

Renders of foot soldiers and the Pyro and Heavy Weapons class from 2006. The W2 art director moved away from W2's cartoon-esque look, aiming for more gritty visuals.



Day of Defeat

The *Day of Defeat* team released Beta 3 of the World War II-themed modification in January 2001. As a result of the game earning a cult following through constant updates, the team was hired by Valve and *DoD* was released in retail in April 2003.

"No PC FPS game had really pulled off the feel and immersion that we wanted in a WWII game, so we made our own. I think everyone who creates a mod has visions of taking it all the way. We were pretty lucky to have that opportunity."
—Jakob Jungblut





Emmace, British, and German troop riders





“An early ‘payme-cas’-inspired player model.”

Counter-Strike

In spring 1999, Minh Le and Jess Cliffe began working on Counter-Strike as a mod for Half-Life. That June, the first Beta was released. By 2000 more people were playing Counter-Strike than Valve's commercially released multiplayer games. Le and Cliffe were offered jobs by Valve to continue working on the game full time. Today, Counter-Strike generates more internet traffic than the nation of Italy.

“We went back into counter-terrorism for a while and had been making mods in the community for years. I had made a CT-themed mod for Duke called *Heavy Sex* and we’d worked together on *Action Quake 2* before leaving to do our own thing which was Counter-Strike.” — Minh Le

“I remember during the Beta 6 release, one teenage kid from Florida posted the install file on his ISP’s webpage. The release was so heavily downloaded that the systemically took down his whole ISP for a day or two, losing them thousands upon thousands of dollars. The kid was arrested by the police and spent time in a juvenile detention center. He was just trying to serve up some CS for his friends who lived close by. I’m not sure if he just didn’t know how many people would download it and what the effect would be. I don’t want to imagine the poor knock-kneed kid’s night in the hepatopexy, but to have landed someone in the slammer for just putting our files up for download was a pretty bizarre indication of the popularity of the game.” — Jess Cliffe



Hostage Situation
Chuck Jones

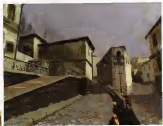
Steve Johnston and Chris Ashton's *Dust* remains the most popular map in the history of the game.











Counter-Strike: Source

In 2004 Valve decided to bring Counter-Strike forward to the Source engine as the natural choice for Half-Life 2's multiplayer component. Original co-creators Minh Le and Jess Cliffe were part of the project along with members of the Day of Defeat team and other Valve developers. The new version of the game, dubbed Counter-Strike: Source, features enhanced environments, physics, and shader-based DirectX 9 rendering. After a Beta period in summer 2004, the game was released with Half-Life 2 in the fall.



Italy

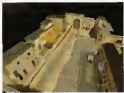
Kristen Perry

"One of my favorite maps to work on was Italy, with its colors and materials that are more vivid than other map atmospheres. I first took a lot of screenshots to create the scenes above as a postcard. If you compare the concept of the marketplace to the final output of the map, you'll see nearly a texture-for-texture recreation of the sketch!" —Kristen Perry



Dust
Kristen Perry

Artists added bump and the specular maps, which performance budgets allowed. Textures have up to five different levels of texel density.





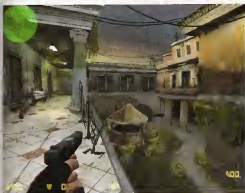
Achieve
Krisla Perry

One of the most important aspects of re-creating the popular Counter-Strike maps was keeping the base layout intact: in order to make the player's transition from Counter-Strike to Counter-Strike: Source as seamless as possible. Once this layout was laid down and the rest of the map gutted, new details could be built on top.

"One of the great freedoms of the graphic upgrade was a literal: the sky's the limit! (go ahead and do vertical). We could build towering temples, endless buildings and mountains, or surround the map with a 3-D skybox mimicking a residential city."

- Kristin Perry





Havana

Written: Perry

"CS:G uses the physics system to simulate ragdolls when a player dies. This way, no two player deaths look exactly the same. Players will trip, fly and cartwheel in a myriad of ways depending on where the killing blow was dealt from and where they were standing."

- Mike Dussault

Chateau, Italy, & Aztec
Kristen Perry

"The Source engine makes it possible to create lush, natural-looking outdoor areas like the much-improved tamed start location in Chateau. It was great fun playing with the terrain features, I think the modders will be able to go wild!" - Mike Remmen





Dust

Kristen Perry

A firefight in-game (above) and concept of the Counter-Terrorist spawn point (left)

"When we first discussed converting the maps, we decided to focus on making sure they all had a real sense of location. *Reservoir* was one of the strong identities of *CS* when it came out, and as the engine's age increased, so did the amount of scanning you had to do to pretend it looked good. We scoured references. We looked through books and movies and anything we could find, and picked the best elements from each. *Dust* is a mixture of North African, Turkish and Andalusian influences. And for Aztec we actually used Mayan references and Cliff's used soundscapes reference from animals indigenous to the area surrounding the ancient city of Tenochtitlan, modern-day Mexico City." — Ido Hagi



Italy & Dest Kristen Perry

Concept of the Italy marketplace (above) and the in-game final product (left). The Dest marketplace turned bomb site (right).

"Real-time physics is one of the most important new features of CS:GO. It adds more interactivity and helps to make the maps more authentic. A good example is the watermelon in Italy. When shot, it breaks into 15 smaller pieces, which all fly around, spinning, bouncing, creating dust, and sound effects. As far as physics, the only thing I think we're missing is a huge monkey on top of the new pyramids in Aztec throwing down barrels." - Markat Olfen



Navy SEAL & Phoenix Faction
Moby Franke

Model photos for the new Counter-Strike:
Source player characters







Investigation 2: Unexpected Interference

»
.i²

Half-Life had not been long on store shelves when Valve set to work on *Half-Life 2*. The "only" requirement was that it had to be the best game ever made, surpassing *Half-Life* in every way possible. Fortunately, while the designers had given their all to the original game, they had no problem coming up with a long list of things they wished they could have done better. But building *Half-Life 2* was not to be merely a matter of improving on the previous game, continuing the story where the first left off, or increasing texture resolution. It would involve an overhaul of every single element of the game, beginning with the most basic: The engine. Piece by piece, the *Quake*-derived *Half-Life* engine was discarded as Valve began developing something all its own, the proprietary engine technology now known as Source. In the meantime, a call went out for programmers, level designers, artists, and animators who had seen the promise of *Half-Life* and wanted to push the medium of games into truly new terrain. As a new team formed around the core of original designers, they discovered that the lessons of *Half-Life* didn't always apply. *Half-Life 2* turned out to be an entirely new beast, and the path to completion proved to be much rockier, and far longer, than anyone initially expected.



Half-Life 2: Creature Discomforts

.03

It has been said that while the wastelands of Half-Life 2 could fill the City 17 Zoo, those that never made it into the game could provide the excuse for a million Carnivore planets. For every creature that made it into the final game, millions more were discarded. While most creature designs never got further than rough sketches, others were painstakingly modeled, textured, animated, and voiced before reaching their own personal Doomsday. Here is a collection of some of the cullings that populate the imaginations of Half-Life 2's creative masters. The toughest ones were hairy enough to slay even apes, phylosofing, and came in full variety in Half-Life 2. Others were dimmed in their glory and may never see the light of day in a Half-Life 2 sequel. These beasts are real, but they never were.





Zombie
Ted Backman

"Most of times in games, developers play the 'horror card' and try to make something that has big penny teeth and make it as scary as possible. I have never been satisfied with that; it seems a little too heavy-handed and isn't usually scary. Instead of going for the horror response, I really like to make it more revealing, something that is just disgusting. When you look at a lot of things in nature like maggots, they are not especially scary, but they are one of the most revolting things that you can think of if you really watch them. It is that sort of response that we are always trying to play up." - Ted Backman

Cremator
Dustin Trigg

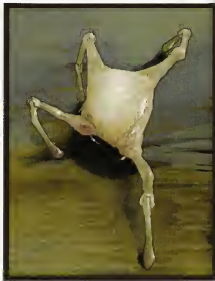
The Cremator, a Combine janitor of sorts, was to wield a large spray hose that dissolved organic matter from the streets of City 17 after unrest had been squashed. A Cremator head can be seen in a jar of formaldehyde in Eli's lab.



Headcrab
Tad Raczman

"The Black Pusser Headcrab is actually from an experiment that was made during *Half-Life 1* that we brought back and finished for *Half-Life 2*. The idea is pretty simple: it doesn't actually kill you when it attacks; it just leaves you with one point of health, no matter what. Black Headcrabs were a great tool for adding pain into an encounter. Once players had learned the distinctive sound of the poisonous critter and knew the implications, they would spin around desperately looking for the creature regardless of their other foes. The mere presence of the threat thus made the other monsters in the scene more threatening and interesting."

- Tim Letchard





Zombies

The AI for the Fast Zombies was originally designed for an alien assassin, destined for a section of the game that never made it into final production. The AI was moved to various points throughout the game, eventually finding its best fit in Ravenholm. This prompted a series of designs to fit a model to a pre-existing AI framework—one of very few monsters designed that way in Half-Life 2.

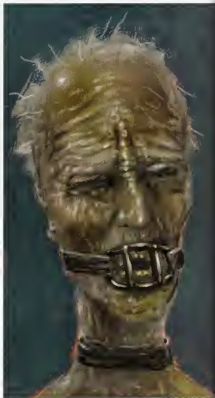
"Creating the sound effects for HL2 was a huge effort. We have thousands of unique sounds. I used a combination of library sound effects, my own recordings, and sounds I created using synthesizers as a basis for everything in the game. I'd usually start with a new sound and then spend hours chopping it up and playing with it to get something unique or different sounding. I've used a variety of hunting calls for elk, coyotes, deer, rabbits, goose, ducks to try to come up with different vocal patterns for monsters. I find there's nothing like the sound of a bull elk call echoing down the halls in the afternoon to wake up your coworkers." — Kelly Bailey





Stalker
Ted Beckman

The Stalker at different stages of design, including a very early design with a mace, later concepts with blinders, a near-final design with weaponry, and finally, an in-game model.

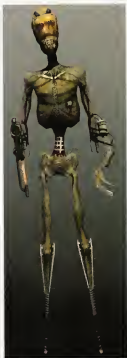






"I thought the Stalker was a great monster. It was this kind of nullified, empty-faced human that the Combine turned into a slave laborer. They're putting all the organs and run them on saline solutions so they are easier to maintain. The Stalker idea came from wanting something that creeped around in the shadows and then jumped at you. We took a half-baked idea and turned it into something more horrific because the Stalkers are really the victims. When you face them, they are these creepy, half-human things that you can't help but almost pity. I was hoping to put enough humanity into the things that it wasn't just a scary monster, instead it was something that presented a moral dilemma every time you had to deal with it, which I think is a more interesting problem. It is more horrific to have to deal with an innocent hostage than something that just wants to eat your brains."

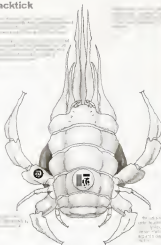
—Ted Buckman



Sacktick

Alma Faoro, Sacklick, & Tipped Wopper
Ted Rockman

A collection of unused alien creatures.



ti trodi Poppe:



most made by hopping from
plant to plant - tries to land
on exposed mud. If it is exposed
some of the mud from the



The Stomper, Alex Faaro, & Roundeye
Red Securus



The Hydra

Todd Beckerman

The Hydra was made of lustrous gelatinous flesh with organs clearly visible. The head was part of a larger massive colonial organism.

"The Hydra was my pet feature: a creature I wanted in from the start. We designed whole areas of the game around it; I personally spent about six months on and off getting all the movement algorithms and physics to a working state. Everyone was pretty skeptical it was even possible when I started, so I kept it pretty low profile, but once I got some of the early rough AI drafts up and running people would sneak one into a map and check it out and get all excited and start pushing me to hurry up and finish it. However, the slower it got to being done, the more its label flow was becoming clear: it was amazingly cool to watch it fight other characters, but it was zero fun to play against in first-person. When it attacked others, as the player you could see the protobug glowing giant roach snaking through the map, knocking stuff over and putting on a great show, but when it attacked you, the player, you'd just see this non-descript blob doing something vague, then you'd be dead. Creating it was personally very painful, but I had to do it when a design just isn't working, it just isn't working, it'd still be to see this in the Half-Life universe somewhere, maybe rethink the AI were along the lines of an Android." - Ken Bredford





David Scanner
Ted Backman



Combine Advisor
Ted Backman

"In designing this character we wanted to suggest that an organism, not unlike humans, began to depend on the technology that was originally created to improve its quality of life. Over the course of its evolution, it became grublike, with limbs no longer able to support its own weight, eyes too feeble to see without aid, a body now incapable of movement. Fully dependent on the technology that it created. It was, however, incredibly evolved in its ability to reason, invent, and dominate the minds and cultures of other beings. This design was also in part inspired by the writings of Frank Herbert." - Ted Backman





Slender
Synth

The giant Cowline Synth stalks the streets of City 17

"As animation reference for the Slender, I used a giraffe/ponia combo. I wanted him to capture the gracefulness of a giraffe, but also have the Slender stamp and load with his elbows like a ponia when he walks, to convey a certain power." — Rob Fletcher







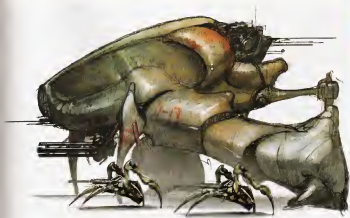
Synths
Dustin Eng

The Synths, self-replicating robots that evolve, were created or taken over by the Combine and enslaved through their conquests and wars.



"When approaching the task of designing the Combine's larger creatures, it was necessary to keep in mind that these lumbering war machines were possibly once organic creatures that the Combine had enslaved and converted during previous invasions. Therefore we tried to incorporate elements that were neither strictly organic nor purely mechanical. We didn't want to have giant alien creatures with armor attached or implants added, but instead tried to treat it as a horrific evolution of the characters imposed on them by the Combine rather than nature. In the end, the designs intentionally blurred the line between machine and animal, in their appearance and more importantly their motion and how they reacted to the world around them."

- Dustin Eng





Combine Helicopter In Nguyen

This mid-point in the Helicopter design cycle had the Combine reinterpret human technology to fit their own sensibilities.



Buggy

The Buggy sand set was created from a library recording of a 1968 Camaro with stainless steel exhaust pipes and a highly-tuned race engine.

"I was going for a citizen-tech look of cobbled together spare parts, adding together layers of wear and tear onto the model, so it looks like it's been through battle and repaired out in the field. It needed to communicate that the Combine has been around long enough that finding the perfect replacement wouldn't always be possible, but there's still lots of options and there's still a lot of creativity on the part of the citizens." - In Nguyen



Jet Ski
In Nguyen



The Mudsucker (Airboat)

The Airboat—officially known as the “Mudsucker”—was originally a jet ski but did not playtest well. Keeping a first person view of the world, the jet ski was too much like running around on feet and had severe problems with communicating frame of reference when driving in one direction and looking in another. A new Airboat design addressed these issues while at the same time being more consistent with the resistance-built theme.



“One of the major problems in developing the Airboat was motion sickness. If the player’s view was tightly connected to the Airboat, every slight bump was magnified, making some early playtesters nauseous—in particular programmer Adrian Finol, who actually threw up after an extended playtest. As a result, there was a careful redesign of hand/steer portents, and roll-cage visual cues. We made these adjustments until the happy day when Adrian declared an illness-free playtest.” —David Sawyer



Combine APC
by Bob Antonov

The APC was originally a player-driven vehicle. Playtesters found that the slow movement wasn't as satisfying as the buggy, and the APC was reworked and used by the Combine forces only.



Combine Dropship
Ted Beckman

The Dropship was originally designed to not only drop enemies, but to walk on land as a large crablike creature.







Gumbie Gumbie
Ted Beckman

While early Gumbie concepts were quite roach-like, the final version shows a more ambiguous, synthetic look. During early playtesting, the team noticed that the Gumbie would accidentally consider rockets fired at it as the more interesting enemy and try to shoot them down. This played so well that the RPG vs Gumbie battles were reworked into a game of cat and mouse.





NORMAL FLIGHT



NORMAL HOVER



THRUSTING FLIGHT



COMBAT

1/20. 3/20. 3/20. 3/20. 3/20.

PIPS OUT ON BOTH SIDES WHEN IN HAND
FIRES FROM THIS





Creature Scanner

Shahin Erg & Ted Backman

This Combine menace blinds the player while relaying his location to ground soldiers. The Cry Scanner design was heavily modeled after the shape and movement of a snail.





The Attilan King
 Ted Beckman

"We knew our fans had grown up a little in between RL2 and RL3 and wanted to direct a post-Ma friendly response. For the Attilan King design, we took our past saurian head structure, our past duff and sprinkled some warty growths on the top as a crown." After the first character concepts for this guy were done, I made a three-foot-long version in Roma Plastilina. (Unfortunately, this was my first attempt at sculpting free-standing characters in clay and the maquette eventually crumbled.) The Attilans were to have a patriarchal society, much like ants have a queen, but this was to be a creolism even larger than the Skrull. For a rough idea of scale, in the maquette, Gordon is stuck between the toes of the beast, which towered some 60 feet. During development, the top-side Attilans started working, and more and more of the underground species were cut, until eventually there was no place left for the King." - Ted Beckman



Low-poly Arcton in-game



Low-poly Arcton with normal map (bump map)



Low-poly Arcton with normal map

"Initially, we were having difficulty authoring bump mapping on our characters. We'd spend weeks and weeks doing it the traditional way of authoring low and high polygon models, only to get mediocre results. Toward the end of the project I ran into Ray Raitt at a meeting with Microsoft on the future of graphics. Ray had created the facial animation system for Gollum in *The Lord of the Rings* movie series and did digital sculpting on Gollum's head, and I told him that we were likely to cut bump mapping, which Ray and I thought would be a huge mistake. He volunteered to take one of our Arcton models and, using a tool called 'ZBrush'—the same technique that they used on *The Lord of the Rings*—do a twenty-minute pass on it. The team loved it. Afterward, we reworked a large number of models in the game, adding bump mapping to them, including the faces for the main characters."

—Gary McGagart

Artificial Guard

The Guard started life as a near-sighted bull. It could stick its nose into holes in the wall and look around for the player or charge the player and batter him with a clublike head. By lobbing small, noxious pods at you (which later turned into the Phoropods Gordon would employ himself) the Guard was able to flush the player out of hiding and into the open where he or she was vulnerable.



Fully-rendered, low-poly Artificial Guard in engine





Combine Assassin
Tid Blockman

Concept for the successor to Half-Life's female assassin. The helmet design found its way onto the Combine Elite model.



03

Half-Life 2: Creature Concepts

HALF-LIFE 2: BEYOND THE BOX

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Alien Assassin
Dustin King

This Combine Alien Assassin known variously as the Brooder and Shock Trooper was the original form of the Fast Zombie.



Centrine Synth Elite Soldier
 Ted Beckman

Vinkov takes on a part-human, part Combine Synth Elite Soldier. The final design was a more conventional soldier with a helmet and uniform, similar to the Combine Soldiers.



**Early Combine Soldier
(ed Backman)**

This very early version of the Combine Soldier looked like a snake or worm. Eventually it was decided to avoid any direct representation of human scale when enemies and instead visually depict the Combine as a more transparent force.





Combine Helmet
Ted Backman

Early Combine helmet design was influenced by the work of Hayao Miyazaki

Combine Sniper
Ted Backman

The Sniper was a supporting design to work in concert with a version of the Combine Elite



L.A. Latham



L.A. Latham
Ted Backman

A study for the female protagonist's combat suit

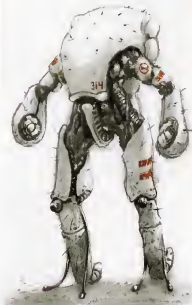


Overwatch Soldier
 Ted Buckman

The Overwatch Soldier was to wear a smart camouflage suit. The color and pattern of the suit would change constantly to match its environment.

Combine Elite
 Ted Buckman

The Combine Elite was originally designed as an existing Combine creature: something akin to a small bipedal Strider, grafted into the proportions of a human soldier. Problems with using an overtly alien model in the alien setting of the Citadel eventually caused it to be dropped in favor of a more humanized model.





Metro Cop



Combine Guard
Dustin Eng

The uniform for the Combine Guard was inspired in part by the German SS uniforms of World War II. Initial concepts had them wearing long trench coats. Since the Metro Cops were designed a similar style helmet was devised for the Combine Soldier.





Combine Soldier

Combine Soldier
 by Beckstein

"Combine is a term for the game's evil empire." The Combine as an organism is successful because of its lack of specialization. It's something that no civilization has ever been able to adapt fast enough to resist, because it has so many arms, so many different attacks, and so many different species experienced and co-opted for their strengths. As soon as the Metro Cops and Combine Soldiers, humanity is the latest species to be exploited for its negative traits.

—Ward Landrum





Combine Soldier
Ted Backman

Different insignias, helmet, and uniform treatments
for the Combine Soldier



Metro Cop

"The Metro Cops went through several suits of animations during their development. No one felt right until we decided to give them a more bullying personality. I put a slight swagger in their walk, and made them load with their chests more. They tend to do their talking with slus-b words, so we made sure that they always had one in their hands." - Doug Wood



Combine Elite

Combine Soldiers

"If the Combine has access to infinite technology, what are their protective materials going to be like? Is it going to be like other games, out there where they just have metal breastplates and shoulder pads? Is that high-tech? It seems to me like that is more like a low-tech approach to body armor. For the body armor, they don't have shoulder pads, which is something that everybody seems to love to put on soldiers in video games. I don't know why. I don't know if they think that soldiers will be tackling people. I always try to look at all the conventions out there and then figure out if there is a reason for them, or if it is just unnecessary baggage. In designing the costume, I wanted something that made sense and that could actually be plausible years down the road."

-Ted Buckner









Half-Life 2: Digital Drama

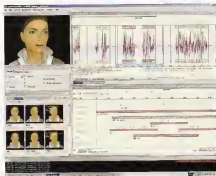
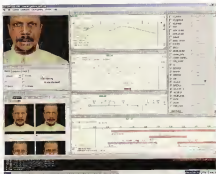
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The enthusiastic response to the very low, very primitive dramatic scores in *Half-Life* convinced Valve that developing the technology for better acting and animation should be a top priority in creating *Half-Life 2*. Whereas in *Half-Life*'s era, it was revolutionary for characters to simply move their mouths when they talked, more robust and complex scenes were impossible given the set of tools and technology available at the time. As developers set to work on a powerful animation system, other designers couldn't help but dream up ambitious scenes, and a plot that depended on characters as much as on combat. Drawing on a trove of radio, stagecraft, and cinema, Valve's choreography team pushed the limits of in-game cinematic. As you bustled the duo toward action, "a cascade would no longer mean 'horrible voiceover'."

Intel's Faceposer tool in action (right). Faceposer allows authoring not only of facial expressions, but also of body language, gestures, and stage directions for all the actors in a scene. All of these instructions are passed through the AI system so that the game can automatically adjust to changes in the game environment, as well as to actions of the player.

"We knew that the only way we had a chance to complete the nearly three hours of character acting without an army of actors was by developing a library of gestures and postures that we could layer in Faceposer. We developed smart blending rules and influence ramps that enabled us to reuse our library of gestures and postures over and over again without appearing redundant. Each of our main characters had their own unique library which established their personality. Not only was it essential from a production standpoint, but it was a great way to keep continuity."

- Bill Fletcher





Alex Vance



Denney Callahan



Doctor Wallace Green



Repatriated Citizen



Resistance Citizen



Resistance Citizen





Doctor Isaac Klemer

An early model version (left) and final model with heads folded (below). Doctor Klemer is a Black Mass survivor brought forward in order to fill out the remaining science team of Dr. Kostas and Judith Moseman.

"We thought we had Dr. Klemer's model in the bag, until we had eyes on 'Red Cohn'. We were in the elevator with him and we said, 'Oh my god, that's Doctor Klemer!' We spoke with him and he was happy to let us use his face, as his two teenage boys were both *Half-Late* fans. It was always fun to run into him at Starbucks with team members that didn't know where we got Klemer's face. They'd just start staring at him, trying to figure out why he looked so familiar."

- Bill Van Buren



Luman

Klemer's pet (headless) is named after the 1930s Hollywood legend Judy Luman, who juggled acting and the co-invention of "frequency hopping," a core technology used in modern cellphones.

The initial version of Doctor Mossman reinforced the decision that *Half-Life 2* characters would all have short or constrained hair—the alternative to what Valve artists call “helmet hair.” Additionally as the team started working with Michelle Farkas in the voice sessions, Mossman became increasingly more sympathetic and nuanced, moving further from the personality type for whom the model was originally designed.



The Hortagwarts

Hortagwarts are a hive-minded, energy-wielding slave race inadvertently liberated by Gordon Freeman when he destroyed the Nihilanth in the final battle of the Black Mesa incident. Rather than fall under the dominion of the Combine, those Hortagwarts now stranded on Earth have joined with humans to fight for the freedom of all.



Barney Calhoun

Barney is the stalwart former Black Mesa security guard working undercover as an officer for the Civil Protection Unit of City 17. Cognizant of the fact that he still owes Gordon a beer, Barney is a worthy ally in Half-Life 2.



Father Gligori

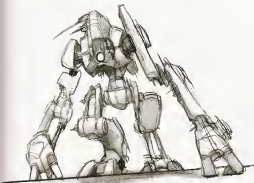
The "mad monk" of Ravenholm did his best to minister to his citizens throughout the Combine invasion and occupation, but in the end his entire congregation has found a new form of resurrection. Having littered Ravenholm with legendary traps and gas-powered guillotines, he meets the enemy with a mad laugh and a blast of shotgun fire.



Colonel Odessa Cabbage

The model for Colonel Odessa Cabbage (right), military commander of a pseudo rebel band, originally was intended for a HL2 character known as Odell (above right). Odell was the engineer of an ice-flocked research ship known as the Borealis. But when Borealis fell by the wayside midway through HL2's development, the Odell model went into limbo until the role of Colonel Cabbage came into being.





Dog

Dog was one of the few creatures that went from the first sketch straight into the game with relatively few changes to the design. Native artists were inspired by classic movie robots, as Dog is a near cousin to Robbie from Forbidden Planet.





Two rebel line-ups: medics and fighters



Resistance fighter concept art

Resistance Fighters

Moby Franke & Ted Backman

"It took multiple iterations by many different artists to come up with a final design for the citizens. One of the biggest challenges was trying to make each citizen group and each individual within each group have a unique look. This meant that people in City 17 or the Coast would have a different appearance and feel from those fighting in the rebellion. Also, at times you can see and interact with several citizens at once, so we had to make sure that they were unique enough for the player to not approach them as clones of each other, but to actually care for them as individuals." — Ariel Diaz



in-game texture sheet applied to male medic model



Populated Citizens
Moby Franke

"We designed the citizens of *Half-Life 2* to look oppressed and downtrodden. Their costumes reflected the location and environment they lived in using standard-issue clothing to give it a prisonlike atmosphere. *Half-Life 2* spans three days, and we wanted the citizens to correspond with the time and location of events throughout the game. Citizens appear in almost every map of the game, but couldn't overpower the player visually. We wanted them to complement the world and not stand out." —Moby Franke



City 17 Gas Mask
Citizen
Olivier Eng





Doctor Wallace Breen
 Ted Ricketts & Chabbi Fay

This concept sketch shows an early version of Doctor Breen's reveal (above left). The player was to have seen his face on monitors during the course of the game, but upon finally meeting Breen, he had begun the process of becoming immortal through Combine artificial life-support technology. Breen was originally referred to as "The Carosol" (left, right) and finally the "Administrator."





G-Man
Othobik Eng

World-renowned Alexander Technique practitioner Frank Sheldon was originally considered as reference for Doctor Breen. Bill Van Buren sent around a hastily Photoshopped image of Sheldon, with chopped-off hair and a scaled-down face shape. It became apparent to everyone on the team that this was actually the G-man instead. The grid drawn on his face is used in building the 3D mesh to construct an accurate and quick translation of facial topology. Van Buren built the basic model, then passed it on to Othobik Eng who pulled in the cheeks and deepened the eye sockets to give him the gaunt G-Man look. Animator Doug Wood, in the process of animating all of the G-Man's facial expressions, spent weeks in front of a mirror practicing the expressions on himself first.



"Animating the G-Man was a short joy. Michael Shepers did a wonderful job giving him a more slender ridge than he had in *Half-Life 1*. I wanted the player to never quite know what side the G-Man was on. I would have him express an apologetic look toward Freeman as he 'regretted' to get Mr. Freeman in this situation, but then give a slight smirk or smile at the end to keep you guessing about his sincerity."

- Doug Wood



TIME-LAPSE OPENING (Proposed 4/1/80)

The basic idea is to convey the passage of time between RL and RL3 virtually, using our new terrain and shadow effects and the teleport tricks we used in the original Test Chamber Disaster sequence. It should be a direct continuation of the end of RL. You are still in the G-Man's custody and control, still basically suspended outside normal spacetime, which makes it fairly easy to say that 10 years have passed in what for you is the blink of an eye.

FADE IN

EXT. WIDE GREEN MEADOWS

You fade in standing on a slight rise in the midst of beautiful rolling hills. The grass is green; at your feet is a small flowing brook; the hills are covered with occasional willows. The sky is blue and fresh, birds are singing in the trees. In the distance, on the horizon, is a modern city. It's an idyllic scene. You can almost smell the fresh air. We show our terrain in all the episodes.

The G-MAN appears just behind you--or perhaps he has been standing there all along. You are still contained in his sphere of influence, meaning that you can turn and move in any direction, but only for a very short distance. You cannot leave the crown of the hill.

G-MAN

Hello again, Mr. Freeman. Sorry to keep you waiting. Not that the passage of time has had any meaning for you, but elsewhere it's a different story. I've been wondering how to explain what the world has become in your absence. I decided to simply show you.

There is an odd quickening, a sense of metamorphosis in the environment. The sky begins to darken ominously. The vivid green color begins to leech from the grass and leaves. The bird song is fading. The sound of wind begins to sweep up. The running water in the creek sinks into its bed.

G-MAN

Don't blink or you will miss it. Sometimes everything can change overnight.

There is a flash. Suddenly everything has changed. The earth is brown; the sky is grey. The streambed is dry and black. The trees are twisted skeletons now. The sound of birds has been replaced with the distant cries of houndeyes and bullegrids. A crow crouches in the black willows, cawing. On the horizon, the sky appears grey, no longer lively. A pall hangs over it. In the sky, streaks of deadly light, dark aircraft. Explosions bloom on the horizon. Louder, louder, the explosions coming closer, closer. A Cushman dropship screams overhead and there is another explosion, surrounding you.

Throughout all the changes, the G-Man continues to talk calmly.

G-MAN

Don't be nervous, Mr. Freeman. We're not really here... not yet anyway.

Another flash engulfs you, and as it fades you find the land has changed again. The earth is utterly blasted. The streambed is choked with ashes. The trees are gone. There is a new sound in the wasteland where you stand, an ugly insect churring. The city is a blackened ruin, its surviving towers tilted and about to fall. The sky is choked with smoke. From the center of the city, an alien spine begins to rise, towering over the damaged human structures. A light flares out from the spine, like a beacon.

G-MAN

Ten years is a long time for most people—a lifetime for some. Long enough to heal the first scars of the war. Long enough to forget the little things, like the taste of fresh air. But you remember, don't you, Mr. Freeman? It was no time at all, for you.

As he talks, a strip of shining red begins to extend across the land in front of you, pointing toward the city. In the distance, you begin to hear the sounds of a train. It gets louder and louder as he speaks.

G-MAN

I think that covers just about everything. All that remains is to put you in the picture.

The Wasteland Train appears, sliding into view like a rusted knife. It squeals to a halt directly in front of you, and sits there hissing and ticking as it cools. A door opens in the side of the rear car.

G-MAN

All aboard, Mr. Freeman. Time waits for no man.

You climb aboard the train. There are several passengers on the car, but they are frozen in their seats, caught in mid-motion, completely unaware of you.

The door hisses shut. A moment later the sounds of movement commence. The train begins to crawl forward. The G-Man slides out of sight on the blasted hill. And the other passengers slowly, then abruptly, lurch back into life.

One of them, Samuel, looks up at you sharply.

SAMUEL

Hey, you startled me!



Captain Vence
 Dhwah Eng

In early versions of the game, Aloy was the daughter of a military man, Captain Vence, though she was very close to Eli. Vence played a compromised and dangerous role protecting the Air Exchange while secretly engineering resistance fighters. When the Air Exchange was put in the process of development, Captain Vence was a casualty. In our stroke, Aloy became Eli's daughter, thus tightening up the core cast of characters. Vence's face survives on the heels for one of the nine male citizen heads and also currently exists in his purest form as one of the hostages for Counter-Strike. Source

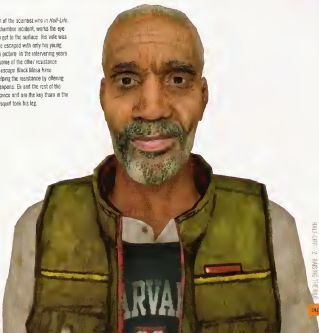


An early concept sketch of Eli Vence with prototype physics mass pulser



Doctor Eli Vance
Thabek Eng

Eli is the *Half-Life 2* version of the scientist who in *Half-Life*, immediately after the first chamber incident, works the eye scanner and tells Gordon to get to the surface. His wife was killed during the disaster; he escaped with only his young daughter, Alyx, and a family picture. In the intervening years since the incident, he and some of the other resistance scientists who managed to escape Black Mesa have organized themselves to helping the resistance by offering support, technology, and weapons. Eli and the rest of the resistance town run the resistance and are the key there in the side of the Combine. A Bullsquid took his leg.





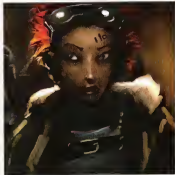


Providing the face for Gordon was too big of a job for just one person. Valve designers took front and side photo reference of David Spade, Eric Kuchner, Greg Coomer, and Kelly Bailey and merged them to create the features for Gordon's head. Reference of Greg was used as a starting point for building Gordon's head model in HSI.









Alyx Vance
Dhrobh Eng

Early concept sketches of Alyx Vance, and photos of Loral Mullen, who served as the face and body model for Alyx. Mullen spent several days in a motion capture studio recording running, jumping, and combat animations, which were used as the starting point for the animation library.

"The original design for Alyx lasted through much of the development cycle, however, when it came time to unveil her to the world at E3 we had to rethink our approach. Gabe posed the question, 'What makes her different than any other heroine in the other games?' At that point not much. She had a two-toned bodysuit with knee-high boots, belts, buckles, and not much in terms of femininity. So just a week or two before our announcement, we had to scramble to come up with a better design immediately. Emergency weekend meetings were held with a small group and we brainstormed ways to make her stand out from the rest. Ideas ranged from giving her gloves like Gordon to making her more of a tinkering mechanic, and at one point, giving her braces, which thankfully didn't stick. I made some quick sketches in those meetings as the ideas floated around and eventually we had our Alyx, a young, feisty daughter of researchers, who wasn't afraid to get dirty and make the most of what she had, such as duct taping the holes in her pocket, wearing her old Black Mesa hoodie and keeping her tool belt by her side."

- Dhrobh Eng

A short story written and handed out to the ALZ development team for design inspiration

ALIZ

How long he had slept--how he had even managed to sleep--Gordon was unsure. The sound of the tracks clattering somewhere underneath the busser must have lulled him. And he had been moving nonstop for so long now, on wonder exhaustion had finally seized him. But suddenly the pitch of things changed. There must have been some hint of it, reaching into his dreamless sleep like a premonition, for he woke a moment before there was any great reason to awake. He was still alone in the sanitation car, hidden among the crates and containers, all of it gently shuddering from side to side, the smell of machine oil and the stink of diesel filling the air. He was hungry, with his meal at Eli's now many hours behind him, and it was cold, as if the suit's regulators were not functioning properly. He was beginning to develop a dread that the RV suit might crap out at any moment, leaving him stranded, with its manoxiflex joints frozen into a rigid state, its satchels dead. Here he would die, awaiting the arrival of the guards like the rest of the cold unmoving crates in the car.

But the dread had little time to develop, as the explosion cut it short. The train rolled sideways, flung from the track. The crates that had shielded him now flew away from him, and he curled into a ball to let the suit protect as much of him as possible from the heavy containers. Even several of the cases strapped to the walls or bolted to the floors tore loose in the moment, the immense torque shearing steel bolts clean off. Gordon came to rest as an alarm whistle shrieked; he had managed to land on top of a cabinet the size of a refrigerator. He could hear shouts, gunfire, more explosions in the distance. He stood up on the cabinet, reaching for the side loading door which was now directly overhead; he could barely reach it, and knew there was little chance that it would budge, even with better purchases.

Suddenly footsteps clattered across the floor. Gordon, he imagined, adduced up above, screaming to protect their shipment. Something clanked down on the thick metal with a maddeningly familiar sound. Where had he heard it before?

The faint high-pitched whine of an activated detonator brought the uneasy sets clear focus.

Gordon leapt for the farthest corner of the car, sheltered by the cases that had nearly killed him, hoping that now they would save his life.

The blast came the instant he hit metal. Shrapnel scored the back of his head; there was an acrid tang that sent him up coughing. It was partially from the eyeside, partially from the explosion. He rose up unvoluntarily, reeled with fumes, and saw the night sky above him. The curved ceiling (once wall) of the busser gaped upward like a scorched metal flower. There were a pair of legs dangling in past the sharpened petals. Legs sheathed in black, heavy boots swinging back and forth as if the wearer had just dropped down at the edge of a pond to fish. But instead of a fishing pole, there was a gun trained down on him, the lower side picking him out in the smoldering dark. He shaded his eyes from the red haze, and heard a soft voice whisper something like, "Check him, Smith."

Gordon gasped as a thing leaped down into the car and came toward him, hopping from crate to crate as it snuffed him out. It looked wet, permanently; the colors were of a toxic brilliance, he couldn't find the eyes, but it had few too many teeth. It crouched above him, flicked its tongue out for a taste, and he felt an acid welt begin to rise across his cheek.

"Don't move," said the person above him. "Don't talk and you'll be dead by your next breath."

Then he heard a thud, and the figure dropped in. He knew instantly--even with the heavy black gear, the belts of ammo, the goggles and the short-cropped hair--that it was a woman. She crouched up until she was neck to her pet. She made a click with her tongue, as if greeting a horse, and the thing wound around and flowed onto her shoulder, settling itself there like a glowering stoic.

A light clicked on, blinding him. And she gasped.

"You!" she said. "What're you--?"

At that moment they both heard footsteps outside--grinding through slanders. It sounded like-- She switched off the light and he felt a gloved hand over his mouth. As if he needed silencing. The steps were coming closer, but

there were no voices; they must have had a way of communicating silently. He had no doubt the car was being surrounded.

"All right," she whispered, "I'm going to trust you. I can use some help carrying stuff anyway. Take this, and come on up."

She unlocked something from her belt; Gordon felt a weapon pushed into his hand. He wasn't sure what it was, but he found a trigger, and that was enough to get started. She gave him her hand and he scrambled up onto the roof as quietly as he could. She hooked her fingers over the edge of the blasted opening, heaved herself up, knelt there in silhouette on the top of the car. As Gordon started up, she began yanking grenades from her belt and lobbing them down into the shadows around wherever the car had come to rest. The explosions were muted with the sound of metal tearing, and ragged screams. Gordon rose up beside her, firing down at the figures moving below. The faint light that pervaded the open tracts of wasteland gleamed on metal, but he wouldn't be sure they weren't men as well. It was over in a few moments; she had an uneasy security with the grenades that didn't seem to be entirely related to their advantage of height.

"Here on the way," she said. "Big ones... let's stock up and get out of here."

She dashed back into the bunker. He heard a muffled explosion as she blasted open a coustomer down below, then she started running upstairs down to him. A second later she was up again.

"Oh, it's Alyx," she said, stuffing the cases into random pockets on her outfit. "I already knew who you are. And I think I can probably guess where you're going."

She pointed out a wounded shape, just visible through the enveloping snow; it looked like the shell of a vast slumbering beetle; a streamlined mass of corroded metal. From the density of the fumes, the stink in the air and the banking in his eyes, he suspected he had arrived at what Eli had called, "The Air Conditioner."

Alyx turned and got to her feet, swinging her gun down into her hand. Something was coming. Out on the horizon, jamming through the fog with a long-legged gait, more than one of them. He squinted, making out what looked like an enormous tripod, surrounded with a huge body, a faint sheen of lenses. He thought of Dog, briefly, one of Dog's cousins, at the height of its powers. There was a sudden flash deep in the eye of the distant thing, and suddenly he and Alyx were firing from the roof of the car. He came down hard to the window, lay there dead for a moment, wondering where he was, until suddenly he felt tiny needles biting into his ear.

He came back to himself, pushing her little heart, switch, away from his head. The rod darted back, licking its jaws, baring the hypodermic teeth.

"She just gave you an adrenaline injection," Alyx said, holding out her arm as the thing clicked back up to her shoulder. "I didn't think you'd mind. Right now, we're going to need to run."

From the far side of the bunker, the first of the tripods rose up and trained its eye upon them. The eye began to scan again, cycling up for another beam. Alyx had already scrambled away. Gordon was on his feet and running an instant before the thought of flight crossed his mind.

The landscape was crested in a poisonous residue, shimmer and swirl and whatever other preposterous name lifting down from the Combine's atmospheric reproducers. Cosmic particles drifted in a steady snow. Gordon slung over a slope that crumbled into greenish powder under his gloves. Alyx was firing at something from the top of the ridge, then she leapt down into a culvert holding a thin stream of acid. Gordon splashed in after her, thinking he saw silhouetted figures on the far side—wondering if they had seen him. Alyx moved quickly up the gully, but as Gordon followed he heard movement behind them. Tall shapes, gleaming armor, bristling with weapons, appeared on the edge of the ravine. He took for the advantage of height. Alyx noticed them at the same time he did.

"Unit," she whispered. "Combine Elite."

They looked like metal, but their movements were muffled, almost silent. Gordon never heard the sound that had dropped into the culvert ahead of them. All he knew was that suddenly they were surrounded...

THE VOICES OF HALF-LIFE 2



Robert Guillaume as Doctor Eli Vance

With dozens of screen and stage appearances to his name, Tony Award winner Robert Guillaume is best known for playing the title character in the sitcom *Benson* and the voice of Rafiki in *The Lion King*.

"We gave our casting agents short character profiles for each role, including the names of a couple of actors as an example of what kind of voice/personality we were looking for. In Eli Vance's profile, we listed Robert Guillaume as an example of the kind of actor we were looking for. It never occurred to us that we might actually get Robert Guillaume himself to do the part—we were floored when he accepted."

— Bill Van Dusen



Robert Culp as Doctor Wallace Breen

Best known for his work in the '60s TV series, *I Spy*, Robert Culp's biggest influence on *Half-Life*'s creators was his starring role in such classic *Doctor Quinn* episodes as "Benson with a Glass Hand."

"On the sample tapes for Robert Culp, he was reading some really awful convoluted scripts and somehow making them entertaining. I thought, if he can make that stuff sound good, he should be able to do amazing things with Dr. Breen's announcements. At our first session with Mr. Culp, he coaxed himself from the studio for a short time to warm up his voice and went off reading passages from Shakespeare's *Henry IV*. At that point I got really excited about how Dr. Breen was going to turn out."

— Marc Laidlaw



Michelle Forbes as Doctor Judith Mossman

Michelle Forbes may be best known among gamers for playing Ensign Ripa in *Star Trek: The Next Generation*, but it was her portrayal of *Alfred Hitchcock*'s forensic pathologist Julianne Cox that first made her seem ideal for the part of Dr. Mossman.

"When we saw Michelle Forbes' audition reel, it was a compilation of several scenes from her TV and film roles. Bill Fletcher, Bill Van Dusen, and I watched these without speaking, and then at the end we were all sitting there choking back tears. This was from a few little vignettes on an audition reel."

— Marc Laidlaw



Michael Shapiro as Barney Calhoun and G-Man

Michael Shapiro, an actor and director of stage and film productions, has also done voice work on games as diverse as *Blood II* and *Spy Fox*.

"I've voiced a lot of interactive games. *Half-Life* is uncommonly well-written. Barney is a hoot, and I sympathize with him, but G-Man's got such great lines."

— Michael Shapiro



Merle Dandridge as Alyx Vance

Merle Dandridge's experience is mainly in live theater, including stints in Broadway and touring productions of *Jesus Christ Superstar*, *Ashe*, and *Rose*.

"Our casting agents auditioned over one hundred actors for the part of Alyx. We listened to all of these and narrowed it down to five actors we felt were interesting enough to audition in person. At the end of the live audition, we didn't even discuss it. Merle Dandridge had the part. Heads down. She's amazing. For Alyx, we needed someone with a beautiful voice, who could be charming, very feminine, and warmly intimate, but could then go into intense circumstances and be a strong, confident and believable action character; we didn't have many actors that could really deliver on both ends of this spectrum, but Merle did a great job with all of it."

- Bill Van Buren



Lou Gossett, Jr. as the Vortigaunt

Louis Gossett, Jr. won an Academy Award for his role in *An Officer and a Gentleman*, but it was his interpretation of the alien leader Shugen in *Enemy Mine* that made him seem ideally suited to tackle the role of the three-headed Vortigaunt in *Half-Life 2*.

"One fun casting challenge was the Vortigaunt. We were getting some really hard audition tapes for this part, and gave the casting agents some a different direction. Look, we want somebody speaking human language, but not human. It's like Vincent D'Onofrio doing Edgar in *Memento* or *Black*. Or another really good example is Lou Gossett, Jr. in *Enemy Mine*. That kind of approach is what we're looking for. Then we got the call that Lou Gossett, Jr. was interested in the part." - Bill Van Buren



Hal S. Rubenstein as Professor Isaac Kleiner

Harry S. "Hal" Rubenstein has achieved cult celebrity not only for his highly detailed underground comics in such publications as *R. Crumb's Weirdo* and *The Meaning of Left and Masculine Socks*, but for his esoteric roots on *Subliminal* radio programs, absurd Spanish palaces at Burning Man, and in regular appearances as "Dr. Howl" in San Francisco nightclubs.

"When voicing the good scientist, I tend to follow my instincts. I was like a peevish, condescending specialist whose just-gets-it done is intended for the benefit of those whom the speaker believes to be unintelligent and in need of explicit instruction. This in itself suggests a comic character portrayal. The best 'mad scientist' voice and manner which I knew of, and which undoubtedly I tend to emulate, would be Lionel Jeffries in the British film *The First Men in the Moon*. A pastiche of his vocal mannerisms serves me well as my 'default' performance. I have always been assisted by useful supervision and direction, which characterizes the need for taking back on such topics."

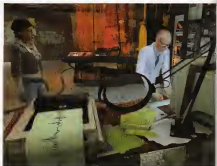
- Hal S. Rubenstein





Walt's choreography team decided to tackle the Doctor Blom's Lob scene first, to have it serve as a template for the other dramatic sequences. They knew the characters had to be seamless and engaging in order to draw players into the world.

"Every scene started with a script, which went through many drafts and lots of feedback from the animators. I wanted to make sure that we were writing scenes that would give animators plenty of opportunities to do work they'd be excited about. Then when we came back with the recorded audio, we'd put together a solo play based on the script." - Marc LaRue





One of the most challenging aspects of the dramatic scenes was lighting the game characters (unlike lighting actors in movies where the characters are in fixed locations and viewed from a predetermined angle, lighting the characters in Half-Life 2 required them to look good from any and all angles). The team had the game actors in focus lights that existed in the world and in some cases it was necessary to add "fake" lights that float in space for when they moved into other spaces of the level.



"Once a scene was working well as a radio play, we would plan out the visual highlights of the scene. This would consist of one or more unique moments that would not only give the scene visual impact, but would also inform the player about emotional underlines and relationships of the characters. One of my favorite examples of this comes when we return to Kleiner's lab later in the game and Alyx and Dog are reunited. I knew this would be a great place to not only have a cool animation of Dog running out and swooping Alyx off the floor, but to also show the strong bond between Alyx and Dog and how much she misses her Dad." — Bill Fletcher

"We really wanted the player to believe that these were real characters living in a real world, and so we worked hard to have them physically interact with each other and with the world around them as much as possible. For example, we wanted our characters to be able to shake hands and hold each other, or to pick up an object and hand it to the player. This proved quite a challenge because of the precision required in both animation and map mechanics, but before long we were able to pull it off. The impact these interactions had in our scenes was significant; they greatly enhanced the believability of the characters and the world." — Jake Nicholson



"After we'd discussed the script and planned out the scene, we'd typically sketch out the action in the level editor, setting up all of the major marks for the actors and implementing the initial logic in a rough version of the map. Working rough allowed the whole team to visualize how the scene would work, and where adjustments would be needed to take account of the player. When the scene was roughly playable, we'd break it and make cuts based on how well it was working. Since all of the dramatic components were working in the engine, an animator would work out any relationships between actors and other objects in the map, and then we'd solidify the timing and logic on all elements of the scene. At this point, the map would go into playtesting and a cycle of responding to feedback from those sessions." - Mark Reed



"The first scene of the game, affectionately called the 'Greenroom,' is also the last full-scale scene the choreography team worked on. It's also the only one in the entire game whose every animator worked together. In some cases, one animator's work would be playing on top of another's work while a third did the facial animations. It was really amazing watching the scene evolve—loading up the level to check the work you had just done and seeing that someone else had just added to the scene. Every day there was something new, and with each layer added, the characters really came to life. It was a true team effort and out of it came my favorite scene in the game."

—Mike Estes



"We had a strong sense of Doctor Green's background and personality going into the studio, but Robert Colp took a very active role in pushing the character the rest of the way. He would suggest small changes to the line readings—things that didn't seem to matter much until you looked at them very closely and realized they were critical. He really got involved in making the character his own. When we did the final screens and recorded the final scenes, there was enough of a creative partnership that Colp was able to take Green's performance somewhere we really hadn't envisioned originally. This turned out to be the core of Green's character. It wasn't something you could put on paper from day one. It had to develop through the relationship with the actor and at some point they felt comfortable taking the same kind of risks we were trying to take with the whole game. If Green comes off as more than the standard Big Brother arch villain, it is as a result of so many creative people pushing this fictional type past the boundaries of cliché." —Marc Laidlaw

